Learning by helping: a bounded rationality model of mentoring

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Abstract

Within an organization, a bounded rational principal organizes a promotion *contest* based on a sequence of tests regarding candidates' relative performances. We assume the principal to suffer from *limited ability to rank* the performances, only identifying the best in each test. Furthermore, he *satisfies* the expected profit from promotion, designing the contest such that expected gains do not decrease with the information generated by additional tests. Then, mentoring is shown to improve the information about candidates' ability when the principal offers help to the current best candidate provided by a manager promoted after a similar contest. © 2001 Elsevier Science B.V. All rights reserved.

1. Introduction

Mentoring relations involving newcomers and senior managers have never been formally modeled in economic theory even though sociological and management literature has demonstrated their empirical relevance. For example, Collins and Scott (1978), Ochberg et al. (1986) and Chao (1997) study various professional environments identifying the extent of relations between mentors and protégés and show that mentored workers experience greater future rewards or career success than non-mentored ones. This paper presents a model that endogenizes the formation of mentor–protégé relations and shows how mentoring can improve the promotion process of workers in organizations.

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In a pioneering study, Kram (1985) underlines the career enhancing functions of mentoring. These functions are coaching, sponsorship and teaching, all of which conspire to increase skills, signal ability and prepare the protégé for advancement. Accordingly, we interpret mentoring as the set of activities by which a mentor can help workers to increase their productivity.

Laband and Lentz (1995) discuss two rational explanations for the use of mentor–protégé relations in organizations. The first is based on the transfer and accumulation of firm specific human capital. The second relates mentoring to job matching theory. To identify the best workers, firms invest time and knowledge of senior managers to cooperate with the promising workers. This cooperation generates information about the quality of job matches and can improve on the matching of workers to jobs. Our contribution clearly belongs to the job-matching interpretation.

We consider a principal who organizes a promotion contest that is, a sequence of tests regarding relative performances of candidates. The tests are based on the workers' performance during the normal course of production. Though the recorded performances are imperfect signals of ability, they help disclose for each candidate the *likelihood* of being the best. After each test, the beliefs of the principal are then revised according to the result. So, test after test, he learns about the relative ability of all contestants in order to limit the risk of inefficient assignment of workers.

The principal here is assumed to be *boundedly rational* for the following two reasons:

1. The problem of the promotion decision in the contest arises from the imperfect nature of the information conveyed by the recording of workers' performance. This imperfection does not only stem from the uncertainty about workers' ability but also from the principal's *inability to cardinally measure or totally rank* their performances. Since a promotion contest may include more than two contestants but the principal only identifies the winner, then his ability to rank is obviously *bounded*.
2. The principal only tries to *increase* (and not to maximize) the expected profit after the promotion. Under the assumption of positive correlation between the current performance of candidates and their future performance if promoted, looking for a higher expected profit is perfectly equivalent for the principal to *increasing* (and not to maximizing) his final confidence in the promoted worker, i.e. the leader at the end of the contest (Simon, 1955).

It is then natural to wonder if a procedure with repeated identical tests and aggregated records of performance always increases the expected profit. Let us consider the following problem: anticipating a vacancy in the next period, the principal gathers previous information about two candidates, Bob and Bruce, after nine tests, and finally promotes one of them after a last identical 10th. Suppose that Bob has won six times and Bruce three. Then, it is clear that whatever happens during the 10th test, Bob will be promoted with a minimum of six victories against Bruce's maximum of four. Moreover, it is also obvious that the principal's confidence — when defined as a victory frequency — regarding Bob as the best worker may have decreased (e.g. from 2/3 to 3/5 if Bruce wins the last test). Hence, the informative content of this last test is weak since the promoted worker remains the same (Bob) while his expected contribution to future profits can be worse. More generally, for any contest involving *n* candidates, we show that there never exists an identical final test always insuring a higher expected profit (see Theorem 1).